REMARKS

Claims 1-42 are pending and all claims were rejected in a final office action mailed on October 3, 2003. Applicants filed an amendment after final rejection on December 3, 2003, and the amendment was not admitted according to an Advisory Action mailed on January 5, 2004. The Examiner checked box a) for the Period to Reply, and Applicants submit that box b) should have been checked because Applicants' amendment was filed within 2 months of the mailing date of the final rejection.

By this preliminary amendment, claims 1, 2, 6-32, 34-42 are pending. Claims 3-5 and 32 having been cancelled. Claims 1, 2, 6, 7, 20 - 22, 28, 29, 32, 34, 35 and 41 have been amended.

Claim 1 is amended to recite a peroxide sensitive enzyme particle stabilized for addition to a composition containing peroxygen bleach, the particle comprising a core made of an inorganic salt or sugar and a layer surrounding the core, the layer comprising a peroxide-sensitive enzyme component and about 10-350 U/g of a hydrogen-peroxide:hydrogen-peroxide-reductase, wherein the particle exhibits enhanced accelerated storage stability as compared to the stability of a similar particle without reductase. No new matter is added by this amendment. Dependent claims 2 and 6-7 are amended to conform these claims to parent claim 1. Method claim 20 is amended to provide that a peroxide sensitive enzyme component in a peroxygen bleach environment is stabilized by forming a granule having a core coated with the peroxide sensitive enzyme component and the reductase at a concentration of about 10-350 U/g, wherein the granule exhibits enhanced accelerated storage stability as compared to the stability of a similar granule without the reductase. Dependent claims 21 and 22 are amended to provide correct antecedent basis from claims 20. Claim 28 is amended to recite that the core material is selected from clay, nonpareils, and seed crystals. No new matter is added by this amendment as all added terms are substantially found in the specification, including the original claims or the previously added claims.

37 CFR §103 REJECTIONS

The Examiner maintained the previous rejection of all claims as obvious over Herrmann et al. (US 6,248,706). In response to Applicant's earlier argument that

Herrmann et al. do not teach the combination of an oxidoreductase at a concentration of about 10-350 U/g of particle and an active agent in the presence of a bleaching compound, the Examiner states that "Specifically regarding the concentrations, Herrmann et al. teach that the enzyme granulates consist of a granulate core with the composition 0.08 to 26.4 wt% enzyme or enzyme mixture, 96.92 to 43.8 wt % of a flour type. See col. 10, ln. 17-28. Furthermore, in experiment 2.4, the concentration of the enzyme in the granulate core encompass the broad concentrations as recited by the instant claims. See col. 17, ln. 50-65." Additionally, with regard to claims 28-42, the Examiner states that "Applicant urges that Herrmann et al. teach only an enzyme-flour mixture core and teaches away from the use of seed cores. However, the teachings of Herrmann et al. recite the advantage of using a granulate core of enzyme and flour type mixture to avoid the extrusion methods and structural varnishing on seed cores. This is not a teaching away as recited by the applicants. The prior art is emphasizing the advantages of one method over another without teaching away either method. Furthermore, columns 3-4 describe the flour type that is encompassed by the material limitations of the newly added claims".

At the outset, Applicants respectfully disagree that the teachings regarding enzyme concentrations in Herrmann et al. are comparable to the units of reductase enzyme taught and claimed by Applicants. **Col. 10, lines 17-28 of Herrmann et al. teach only that the dry substance enzyme or enzyme mixture weight% is 0.09 to 26% with 96.91 to 62 wt% dry flour with a degree of grinding of 30-100%. The Examiner has provided no support to establish that dry wt.% of the enzyme is comparable to the enzyme units described, defined and claimed by Applicants. (Please see pages 4, lines 24-26; page 14, lines 11-14).**

Additionally, Col. 17, lines 50-65 of Herrmann et al. does not teach any enzyme concentration at all and it is believed that the Examiner was looking at enzyme dust values in the cited passage. The col. 17 material teaches only an activity level for an amylase enzyme and dust values. Applicants respectfully request that the rejections of claims 1, 20 and 28 be withdrawn because there is no teaching of a reductase enzyme concentration of about 10-350 U/g in the cited reference.

Applicants also disagree that Herrmann et al. teach the specific combination of a peroxidase sensitive enzyme and a hydrogen-peroxide:hydrogen-peroxide-reductase

(10-350 U/g concentration). Although Herrmann et al. state that enzyme mixtures can be used and recite a great many enzymes, the specific mixture of an oxido-reductase at the concentration claimed with a peroxide sensitive enzyme is not taught or suggested. In fact, **Herrmann does not teach any specific concentrations for mixtures of enzymes or anything at all about peroxide sensitive enzymes. Applicants contend that undue experimentation would be required using the teachings of Herrmann et al. to hit upon the use of the claimed concentration of hydrogen-peroxide:hydrogen-peroxide-reductase in combination with a peroxide sensitive enzyme, particularly in view of the fact that Herrmann et al. teach in Col. 7, lines 8-11, that "if oxidases are used, they can be glucose oxidases or peroxidases;..... Herrmann et al.'s recitation of peroxidases teaches away from applicants' invention as shown in the instant specification (page 6, lines 7-28), stating that peroxidase "would not normally serve the purpose of this invention, since it would not protect the enzyme or active ingredient from the peroxide unless the donor or activator is simultaneously and intimately present...".**

Herrmann et al. does state that "...other very practical enzymes within the scope of the invention are catalase (desizing of textiles), lysozyme, muramidase". Desizing of textiles is a manufacturing process for removing starch, and there is no teaching or suggestion of the use of only about 10-350 U/g concentration of the catalase to stabilize a peroxide sensitive enzyme. There are no teachings at all regarding the concentration of a catalase enzyme or any other enzyme that is added to form a mixture.

The teachings of Herrmann et al. set out above regarding enzymes show no understanding or recognition of the problem of catalase inactivation of hydrogen peroxide, and the specification does not address or teach the use of an enzyme to stabilize another peroxide sensitive enzyme or additive such as a dye.

Herrmann et al. teach the production of granules wherein enzyme, water and fine flour having a degree of grinding of 30-100% are mixed together to form a particle which is a homogeneous composition with the enzyme dispersed throughout the flour. The problem addressed by Herrmann et al. is dust formation using marumization production procedures. The Herrmann et al. solution disperses enzyme throughout the finely ground flour using a "wet" procedure (for example, see claim 1) to avoid enzyme exposure during mixing. The "wet" procedure includes enough liquid to reduce enzyme dust during mixing and the flours surrounding the enzyme also help reduce enzyme dust

and stabilize the enzyme in the completed marum. Herrmann et al. do not teach the provision of a core made of an inorganic salt or sugar (Claim 1) or a core selected from clays, nonpareils and seed crystals (claim 28) coated with the peroxide sensitive enzyme and the reductase (10-350 U/g) as in claims 1, 20 and 28.

Herrmann et al. teach in Cols. 3 and 4, as noted by the Examiner, the use of finely ground organic flours obtained by grinding cereal grains, legumes and/or fruits of the Malvaceae family (cottonseed). Cereals include wheat, rye, barley, oats, rice and maize, sorghum, other types of millet, buckwheat. Legumes listed include peas, lentils, beans, peanuts, lupins, lucerne, soybeans, and cotton. The flours recited by Herrmann et al. are not the particulate cores claimed by Applicants.

Applicants disagree with the Examiner's statement that Herrmann et al. do not teach away from the use of core particles. Substitution of a seed core would not work in Herrmann et al. as it would not result in a core material made of an enzyme solution mixed with and distributed throughout a finely ground flour.

Respectfully submitted,

Date: January 21, 2004

Janet Kaiser Castaneda
Registration No. 33,228
Attorney for Applicants

Genencor International, Inc.
925 Page Mill Road
Palo Alto, CA 94304-1013
Tel: 650-846-4072
Fax: 650-845-6504